

Vermont Department of Education
Agriculture, Food and Natural Resources Career Cluster
Pre Tech Foundation Program
(CIP: PTF01)

Pre Tech Foundation Program Course: Intro to Horticulture and Natural Resources

Pre-Tech Foundation Program Description:

This course investigates the biological, social, political, economic, and technological principles that effect the production of food and fiber. Topics of this course include career exploration, leadership, natural resource management, integrated pest management, plant science, crop production, ornamental plants, animal science, food science, and business management. Laboratories include plant tissue, culture, food quality analysis, wildlife population estimation, landfill monitoring, plant and animal propagation, and commodity trading. This course will expose students to careers as veterinarians, food processors, agriculture production, foresters, wildlife biologists, greenhouse operators, and a wide variety of other agricultural careers. Students taking this course are eligible to participate in FFA contests and events.

Vermont Approved Pre-Tech Foundational Program Competencies:

CORE Pre Tech Foundation Competencies

- A. Think Critically and Solve Problems
 - 1. Solve problems and make decisions in work-related situations
 - 2. Read for information and understanding
 - 3. Use observation skills to analyze work-related situations
 - 4. Apply mathematical processes
 - 5. Apply measurement and spatial skills
 - 6. Apply statistical analysis skills
 - 7. Analyze critical data to guide work activities
 - 8. Utilize scheduling techniques to ensure that jobs are completed by the state due date
 - 9. Demonstrate knowledge of the economy and how it functions as a whole
 - 10. Demonstrate knowledge of the economy as a framework within which decisions are made by individuals and groups
- B. Apply Technology
 - 1. Demonstrate technological literacy
 - 2. Access/transmit information using electronic communication systems
 - 3. Demonstrate computer literacy
 - 4. Use database software in work-related situations
 - 5. Use word-processing software in work-related situations
- C. Communicate Effectively
 - 1. Apply basic communication skills
 - 2. Apply oral communication skills
 - 3. Apply written communication skills
 - 4. Apply technical writing skills
 - 5. Apply listening skills
 - 6. Apply demonstration/presentation skills
 - 7. Apply graphic communication skills
 - 8. Apply artistic communication skills
 - 9. Convey information through multimedia presentations
 - 10. Create graphs and charts
 - 11. Build interpersonal relationships
- D. Manage Resources (Health and Environmental)
 - 1. Apply self-management processes in the workplace
 - 2. Use reference materials to obtain information appropriate to a given problem, topic or situation
 - 3. Maintain/promote wellness

4. Determine the impact of government regulations and business/industry procedures on the performance of particular work functions
 5. Implement safety procedures and programs
 6. Support the provision of first aid in accordance with company policy and procedures
 7. Manage work and family responsibilities for the well-being of self and others
 8. Determine resources needed to produce a given product or provide a given service
 9. Ensure the quality of products and services
 10. Utilize an inventory control system to track supplies, materials, and equipment
 11. Make informed financial decisions
- E. Work Effectively and Responsibility
1. Demonstrate leadership
 2. Contribute to team work
 3. Demonstrate responsibility for learning
 4. Choose ethical courses of action in all work assignments and personal interactions
 5. Demonstrate the work ethic
 6. Comply with the confidentiality requirements of workplace policies and procedures
 7. Apply appropriate strategies for dealing with the differences associated with diversity (e.g., racial, ethnic, gender, educational, personality, social, and age)
- F. Demonstrate Employability and manage a Career
1. Identify how personal interests, abilities, and skills relate to choosing a Career and Workforce Development
 2. Investigate career options
 3. Chart career using career-planning skills
 4. Demonstrate skills needed to enter or reenter the workforce
 5. Demonstrate job-keeping skills
 6. Upgrade career skills
 7. Explore opportunities to create a business
- G. Demonstrate an Understanding of Academic Connections to Core Pre-Tech Foundational Competencies (CPFC)

Crosswalk of Academic Connections to Core Pre-Tech Foundation Competencies

Crosswalk attached

FOUNDATIONAL COMPETENCY

- H. Demonstrate an understanding of a chosen career cluster that the individual is preparing to enter
1. Workplace behaviors, skills and personal and professional development
 - Work Place Behaviors
 - Maintain an acceptable attendance record.
 - Work well independently, showing pride and interest in work assignments.
 - Demonstrate aptitude for creativity.
 - Plan and perform work accurately, neatly and efficiently.
 - Show personal growth as a worker, evaluating own work.
 - Follow directions from supervisors and are willing to ask questions for clarification.
 - Develop good oral and written communication skills.
 - Cooperate with co-workers and supervisors.
 - Demonstrate teamwork as a contributing team member.
 - Demonstrates positive attitude toward work.
 2. Identify common occupations found within the career cluster Develop personal career goals.
 3. A school to work experience in the chosen career cluster
- I. Demonstrate Technical Skills within a Chosen Career Cluster – (These will be developed with center partners and will be based on the Career Cluster Program Competencies.)

Horticulture Careers

(Vermont Standards: 3.15, 3.16, 4.5)

Plant Science Processes

(Vermont Standards: 1.3, 1.10, 1.17,

Plant Science Taxonomy

(Vermont Standards: 1.3, 1.10, 1.17,

Soil Science Concepts

(Vermont Standards: 1.3, 1.10, 1.17,

Plant Propagation: Sexual

(Vermont Standards: 1.3, 1.10, 1.17,

Plant Propagation: Asexual

(Vermont Standards: 1.3, 1.10, 1.17,

Pest Control

(Vermont Standards: 1.3, 1.10, 1.17,

Practice Work Place/Equipment Safety

(Vermont Standards: 3.3, 7.18)

Apply Surveying and Mapping Skills

(Vermont Standards: 7.6, 7.7)

Perform Forest Management Tasks

(Vermont Standards: 3.5, 3.10, 3.11, 3.12, 3.14, 3.15, 7.7, 7.10, 7.11, 7.12, 7.13, 7.17, 7.18)

Protect Forests from Pests, Diseases and Fire

(Vermont Standards: 3.5, 3.10, 3.11, 3.12, 3.14, 3.15, 7.7, 7.10, 7.11, 7.12, 7.13, 7.17, 7.18)

Harvest and Process Timber

(Vermont Standards: 3.5, 3.10, 3.11, 3.12, 3.14, 3.15, 7.7, 7.10, 7.11, 7.12, 7.13, 7.17, 7.18)

Process Forest Products (e.g. Maple Syrup, Christmas Trees)

(Vermont Standards: 3.5, 3.10, 3.11, 3.12, 3.14, 3.15, 7.7, 7.10, 7.11, 7.12, 7.13, 7.17, 7.18)

Apply Best Management Practices with Land, Soil and Water Conservation

(Vermont Standards: 1.22, 3.5, 3.9, 3.10, 3.11, 3.12, 3.14, 3.15, 7.7, 7.10, 7.11, 7.12, 7.13, 7.14, 7.15, 7.17, 7.18)

Apply Wildlife and Outdoor Recreation Management Skills

(Vermont Standards: 7.2, 7.10, 7.11, 7.13, 7.15)

Operate and Maintain Forestry/Conservation Equipment

(Vermont Standards: 1.22, 3.3, 7.18)

Apply Business Management Skills

(Vermont Standards: 1.6, 1.22, 2.2, 2.11, 3.8, 5.18, 6.16, 7.6, 7.10, 7.17)

Apply Sales/Marketing Concepts

(Vermont Standards: 1.1, 2.14, 4.1, 4.2, 6.16, 6.17, 6.18, 6.191)

Apply Leadership Skills

(Vermont Standards: 1.5, 1.11, 1.13, 1.21, 2.2, 2.14, 3.5, 3.7, 3.10, 4.1, 4.2, 4.3, 4.4, 4.5, 5.5, 5.6, 5.7, 6.2, 6.3, 6.10, 6.12, 6.13, 6.15, 6.20, 6.21)

Learning Opportunities/Units:

AFNR Careers

Orientation to the FFA

Supervised Agriculture Experience

Matter and Energy

Cellular Biology

Genetics

Ecosystems

Safety

Soils

Hydrology
Forestry
Insects
Disease Causing Organisms
Site Analysis
Wildlife Biology and management
Plant Science
Ag. Issues/Public Speaking
Tree Surgery
Greenhouse Nursery management
State Testing
Review and Finals

Instructional Materials and Resources Used:

Textbook/Resources	Publisher	Copyright
Teacher Developed Materials	Instructor	Current

Internet:

Web sites are used for research on careers and course topics.

Assessment and Grading Policy:

Numerical – based on 100 % scale where:	
Assignment – projects, designs, presentations. etc.	49%
Portfolio	7%
Tests and quizzes	17%
Participation	20%
SAE Records	7%

Course Expectations:

Complete all assigned work on time, neatly, accurately and professionally. Participate in class discussions, problems, duties, assignments, presentation, etc. Develop and maintain a course portfolio of all material including your notes, handouts, projects, assignments, etc. Maintain a passing average or greater on all assignments, projects, presentations, etc. All students will develop a Supervised Agriculture experience. Participation in FFA activities is expected.

Instructor Expectations:

You are expected to act in a professional manner. We all must treat everyone with respect and keep a positive attitude. Violations of the code of conduct are not expected, but if they occur they will be dealt with individually. Extra help will be made available whenever possible. If you need extra help from me or more time in the classroom to use the tools and equipment. please don't hesitate to ask and please don't procrastinate.

Family Involvement or Community Services: Discussions about the importance and impact of business ethics, academic honest, college choices, community events and open houses and job opportunities all enhance classroom activities. Read agriculture books to elementary students. Demonstrate agriculture techniques to elementary school students and the public.